

HIGH FATIGUE STRENGTH STEEL FOR STRUCTURAL PURPOSE AND STEEL MEMBER MADE OF THE SAME

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Abstract of JP 5065592 (A)

PURPOSE: To combinedly provide a steel with hardenability and soft-nitriding properties with a good balance and to attain the reduction of distortion (the improvement of accuracy) as well as excellent fatigue strength, as for a steel for structural purpose having excellent fatigue strength and a steel member made of the same by reducing expensive alloy elements of Cr, Mo and V as well as C and Cr.

CONSTITUTION: This high fatigue strength steel for structural purpose is constituted of, by weight, 0.1 to 0.35% C, 0.05 to 0.35% Si, 0.6 to 1.50% Mn, $\leq 0.01\%$ P, $\leq 0.015\%$ S, 1.1 to 2.0% Cr, 0.5 to 1.0% Mo, 0.03 to 0.13% V, 0.0005 to 0.0030% B, 0.01 to 0.04% Ti, 0.01 to 0.04% Al and the balance Fe with inevitable impurities.; Then, the objective steel member is manufactured from the above steel for structural purpose and is obtd. by locally subjecting the steel to high frequency induction heating, austenitizing it at 850 to 1050 deg.C, forming its structure into a bainitic one by the self-cooling of the above steel member or air-cooling and then executing soft-nitriding treatment.

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